Statement of Basis

Molded Fiber Glass Alabama
603-0029-X001

On August 22, 2017, the Department received applications from Molded Fiber Glass Alabama (MFGA) for renewal of the Title V Major Source Operating Permit for their fiber glass facility in Opp, AL. MFGA manufactures wind energy nacelles (generator housings) using fiberglass reinforced plastics.

Operation:
The facility applies gelcoat to both the interior and exterior of parts with atomizing airless air assist or non-atomizing spray equipment, and a very small amount is applied using manual resin type application post-molding. Resins have previously been applied in an open molding process using non-atomized application equipment with some manual hand lay-up and manual lay-up has been used to tie in reinforcements and apply glass mat. MFGA has begun transitioning from open molding resin application to Vacuum Resin Infusion (V-RIM), which is a closed molding process, but could utilize the open molding process if necessary. After removal from the molds, the parts are trimmed, sanded, drilled, and assembled before shipment.

Gelcoat and resin lamination are conducted in a large lamination area with two 40,000 cfm make up air units with 2.0 mmbtu natural gas fired burners to provide winter heating. The booth has three vertical exhaust stacks, with 50,000 cfm each. Trimming and sanding operations use source pickup and dust collection to reduce fugitive emissions. All materials requiring mixing are mixed in covered containers and remain there until used. A small dust collector is attached to the mix cover to collect dust during filler addition into the mix vessel.

Emissions:
Most of the facility's emissions are styrene emissions from the resins and gelcoats. Styrene is both a VOC and HAP. There are some emissions of methyl methacrylate (MMA) which is also a VOC and HAP. Other emissions would be PM from trimming, painting, and molding operations. The approximate potential to emit for styrene and MMA are based on American Composite Manufacturing Association (ACMA)/ American National Standards Institute (ANSI) Unified Emission Factors (UEF). Other VOCs are based on material balance. The potential to emit for PM is based on the process weight curve. The table below lists MFGA's approximate potential emissions, showing Open Molding, Vacuum Infusion Molding and the total of the two.

Table 1. MFGA Potential Emissions Open Molding		
Pollutants	*Emission Totals (tons)*	*Actual Emissions (tons)*
Styrene (HAP)	280.76	60.0
MMA (HAP)	22.78	4.9
Total HAP	303.53	64.9

VOC	320.62	68.5
PM	2.63	1.87

Table 2. MFGA Potential Emissions Vacuum Infusion Molding		
Pollutants	*Emission Totals (tons)*	*Actual Emissions (tons)*
Styrene (HAP)	156.37	33.4
MMA (HAP)	21.46	4.6
Total HAP	177.83	38.0
VOC	221.19	47.3
PM	1.31	0.94

Table 3. MFGA Total Potential Emissions		
Pollutants	*Emission Totals (tons)*	*Actual Emissions (tons)*
Styrene (HAP)	437.13	93.4
MMA (HAP)	44.24	9.5
Total HAP	481.36	102.9
VOC	541.81	115.8
PM*	4.16	2.968

*Includes emissions from trimming and sanding operation.

Requirement:
The entire facility is subject to the Title V permitting program. There are no New Source Performance Standards (NSPS), as listed in 40 CFR Part 60 that apply to the facility. Molded Fiberglass Alabama is subject to the National Emissions Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production as listed under 40 CFR Part 63, Subpart WWWW (RPC MACT). Under §63.5805 (b) of the RPC MACT, MFGA is required to meet the applicable emissions limits for organic HAP listed in Table 3 of this subpart and work practice standards listed in Table 4 of this subpart. MFGA uses various different resins and gelcoats and most of these have their own emission limits. To demonstrate compliance with the various emission limits MFGA monthly calculates weighted averages of emissions and the applicable emission limits using the formulas found in §63.5810 (c). MFGA is currently demonstrating continuous compliance with the calculated emission limits. The work practice standards for this facility are for a cleaning operation, a HAP-containing materials storage operation, and possibly a mixing operation in the future. The facility is also subject to the applicable recordkeeping and reporting requirements of this MACT.

Because MFGA operations include an open molding process the facility is required to use one of the compliance options listed in §63.5810 (a) through (d) to meet the emission limits in Table 3. MFGA has chosen to use the facility-wide organic HAP limit averaging under §63.5810 (c), but under §63.5810 MFGA is allowed to switch between compliance options. MFGA is also required by §63.5905 to submit all notifications required by Table 13 and by §63.5910 to submit all reports required by Table 14.

The facility uses some HAP containing adhesive in its coating and adhesive operations. HAP containing adhesives are covered under the National Emission Standards for

Hazardous Air Pollutants for Surface Coating of Plastic Parts and Products listed under 40 CFR Part 63, Subpart PPPP. Because MFGA uses more than 100 gallons per year and is a major source of HAP emissions it is subject to Subpart PPPP. The facility is required to limit its HAP emissions from the applicable coatings to 0.16 lb HAP emitted per lb coating solids used during each 12-month period. MFGA is required to use at least one of the compliance options listed in §63.4491(a) through (c). The facility has chosen to use the compliant material option from §63.4491(a).

CAM is not applicable because MFGA has no potential emissions of criteria pollutants that exceed 100 tons per year on any one unit with control device(s).

MFGA is not in one of the 28 categories listed in 335-3-14-.04(2)(a). Therefore, since the potential emissions of all regulated NSR pollutants from this facility are being limited to levels below the Major Source threshold, MFGA is considered a synthetic minor source with respect to PSD. The facility has requested a synthetic minor limit of 245 tons per year.

Monitoring:
Emissions from fiberglass operations will be calculated using emission factors provided in 40 CFR 63, subpart WWWW, National Emission Standards for Hazardous Air Pollutants (NESHAP): Reinforced Plastic Composites Production. Emissions of VOCs and HAPs will be submitted to the Department on a quarterly basis.

Recommendation:
Based on the applications received, required State and Federal Regulations, and the above information, I recommend that pending a public comment period and EPA review that Major Source Operating Permit 603-0029-X001 be issued to Molded Fiber Glass of Alabama for the operation of their fiber glass operations booth and associated equipment.

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May 11, 2018
JRG/jrg